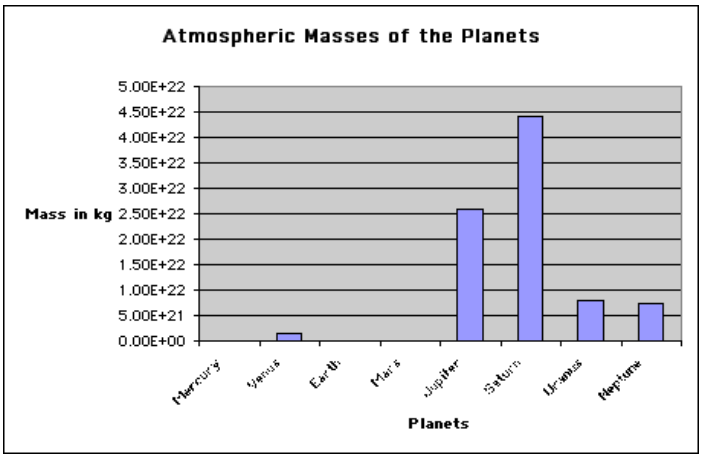
Gravity and Atmosphere Reading

What is gravity?

Gravity is a force of attraction that exists between objects. Gravity is related to the **mass** and **density** of an object or **planet**. The greater a planet's mass, the greater its gravity.

What does gravity have to do with atmosphere?

A certain amount of gravity is needed to hold on to the kind of **atmosphere** we have on Earth. With less gravity, a planet cannot hold on to the atmosphere that we need to survive. With more gravity, the planet attracts more atmosphere. This atmosphere would trap a lot of heat and cause the **temperature** to rise very high. In time, this would cause the polar ice caps to melt, submerging much of the land and causing the oceans to **evaporate**. A planet with more gravity would also attract poisonous gases in its atmosphere.



Is gravity the only factor that affects having the right kind of atmosphere?

Having the right amount of mass and the right amount of gravity doesn't guarantee the planet

will have the right kind of atmosphere. The atmosphere may not be made of the right amount and kind of elements that humans need. Venus is a good example of this. Although Venus's mass is very close to Earth's mass, Venus's surface temperature is hot enough to melt lead! This is because Venus's atmosphere is mostly carbon dioxide, which traps heat from the Sun instead of letting the heat bounce back into space. Earth's atmosphere is mostly nitrogen and oxygen.

Questions

(Answer on a separate sheet of paper)

1. What is gravity?
2. How is gravity related to atmosphere?
3. What happens to planets with large mass?
4. What happens to planets with small mass?
5. Can you have the right mass but still have the wrong atmosphere for human survival? Explain.